

CALIFORNIA COASTAL COMMISSION

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**Th 15a****PROPOSED FINDINGS****ON CONSISTENCY DETERMINATION**

Consistency Determination No.	CD-087-03
Staff:	MPD-SF
File Date:	9/8/2003
60th Day:	11/7/2003
75th Day:	11/22/2003
Commission Vote:	11/7/03
Hearing on Findings:	12/11/03

FEDERAL AGENCY: Corps of Engineers, Los Angeles District

DEVELOPMENT

LOCATION: Aliso Creek, South of Laguna Beach, Orange County (Exhibit 1)

DEVELOPMENT

DESCRIPTION: Construction of an in-water grade-control structure to protect an existing bridge to the South Orange County Wastewater Treatment Plant (Exhibit 2 and 3)

PREVAILING

COMMISSIONERS: Commissioners Hart, Iseman, Nava, Peters, Potter, Woolley, and Chairman Reilly

SUBSTANTIVE FILE DOCUMENTS: (See Page 10)

EXECUTIVE SUMMARY:

The Corps of Engineers proposes to construct a sloping grouted stone grade-control structure protecting the streambed beneath the bridge over Aliso Creek, which provides access to the South Orange County Wastewater Treatment Plant. The project would result in alteration of an existing stream and placement of fill into coastal waters. The project is for flood-control purposes, making it an allowable alteration of the stream under Section 30236 of the Coastal Act. The project is the least environmentally damaging alternative; other designs and the avoidance

alternative of lengthening the bridge and relocating the abutments away from the stream would be more environmentally damaging and/or infeasible. The Corps will provide 3:1 mitigation for wetland effects. With the Corps' mitigation commitments, the project is consistent with the wetland fill, stream alteration, and environmentally sensitive habitat area (ESHA) policies (Sections 30233, 30236, and 30240) of the Coastal Act.

The project would not affect public access or visual resources of the coastal zone, because it is located in a developed area that the public does not use. Therefore, it would not interfere with public use of the area and would not alter the visual character of the area. The project is consistent with the visual and recreation policies (Sections 30251 and 30210) of the Coastal Act.

STAFF SUMMARY AND RECOMMENDATION:

I. Project Description.

The Corps of Engineers proposes to construct a sloping grouted stone grade-control structure protecting the streambed beneath the Aliso Creek Bridge near the South Orange County Treatment Plant. The grade control structure, which would have a crest elevation at the upstream end of 28.9 feet, would slope downstream at a two percent grade for 60.8 feet. At the upstream end of the structure, the Corps would construct a sloping grouted stone cutoff wall that would extend to a depth of 7.9 feet at a slope of 2 horizontal to 1 vertical (2H:1V). At the downstream end, the Corps would construct a similar cutoff wall to the same depth at a slope of 3H:1V. The structure would include a design feature that maintains connectivity between aquatic habitats by creating a low-flow fish passage channel. This feature would consist of a low flow center channel with a width of 7.9 feet and a maximum slope of 10 percent. The Corps would stagger large stones in the center channel to dissipate energy and to create small eddies and pools. The Corps would complete the project within 60 days from the start of construction. To avoid adverse impacts to water quality and habitat resources, the Corps would not construct in flowing water during the wet season (December through early March) or the bird-nesting season (March 15 to August 15).

II. Status of Local Coastal Program.

The standard of review for federal consistency determinations is the policies of Chapter 3 of the Coastal Act, and not the Local Coastal Program (LCP) of the affected area. If an LCP that the Commission has certified and incorporated into the California Coastal Management Program (CCMP) provides development standards that are applicable to the project site, the LCP can provide guidance in applying Chapter 3 policies in light of local circumstances. If the Commission has not incorporated the LCP into the CCMP, it cannot guide the Commission's decision, but it can provide background information. The Commission has certified Orange County's LCP and partially incorporated it into the CCMP.

III. Federal Agency's Consistency Determination.

The Corps of Engineers has determined the project to be consistent to the maximum extent practicable with the CCMP.

IV. Motion.

MOTION: I move that the Commission adopt the following findings of its concurrence in the U.S. Army Corps of Engineers' consistency determination CD-087-03.

V. Staff Recommendation.

The staff recommends a **YES** vote on this motion. Pursuant to Section 30315.1 of the Coastal Act, adoption of findings requires a majority voter of the members of the prevailing side present at the November 7, 2003, hearing, with at least three of the prevailing members voting. Only those Commissioners on the prevailing side of the Commission's action on the consistency determination are eligible to vote. A majority vote by the prevailing Commissioners listed on page 1 of this report will result in adoption of the findings.

VI. Resolution to Concur with Consistency Determination:

The Commission hereby **concurs** with the consistency determination by the U.S. Army Corps of Engineers on the grounds that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the CCMP.

VII. Findings and Declarations.

The Commission finds and declares as follows:

A. Habitat Resources. Section 30236 of the Coastal Act provides that:

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

Section 30233(a) of the Coastal Act provides, in part, that:

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

...

(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

....

Section 30240 of the Coastal Act provides that:

(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.

(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.

Section 30236 of the Coastal Act provides two tests for projects that result in stream alterations. First, the project must incorporate the best mitigation measures feasible, which is similar to mitigation requirement of Section 30233. The second test of Section 30236 is that the project must serve one of the identified purposes. Section 30233 of the Coastal Act also includes an allowable-use test. In addition, both Sections 30233 and 30236 of the Coastal Act require that the Commission consider alternatives. Finally, Section 30240 of the Coastal Act limits development in ESHAs to activities that are dependent on the resources and that avoid significant disruption to the habitat.

1. Environmentally Sensitive Habitat. The proposed project is located within riparian habitat. The environmental assessment describes the habitat as follows:

Southern willow scrub is found along intermittent creeks and streams in loose, sandy, or fine gravelly alluvium deposited near stream channels during flood flows. It is composed of dense, broadleaved, winter-deciduous riparian thickets dominated by Salix lasiolepis or Salix exigua with some Baccharis salicifolia, Salix gooddingii, Populus fremontii, and Platanus racemosa. Most stands are too dense to allow much understory development. Repeated flooding is required to prevent succession to southern cottonwood-sycamore riparian forest. This type was formerly extensive along major rivers of southern Orange County but has been much reduced by urban expansion and flood control improvements.

....

Mulefat scrub is typically found on intermittent streams and creeks with fairly coarse substrate and moderate depth to the water table. Characterized as tall herbaceous scrub strongly dominated by Baccharis salicifolia with Salix lasiolepis and Salix gooddingii, the understory may or may not be present depending on the density of the stand. Mulefat scrub, like southern willow scrub,

is maintained by frequent flooding, without which, it would succeed to cottonwood or sycamore dominated riparian forests.

In southern California, this type of habitat is relatively rare and urban development has adversely affected it. Additionally, these important habitat types provide a source of nutrients into the stream and habitat for organisms that live adjacent to the stream. Although the area does not support any endangered species, its importance to the ecosystem and rarity warrant the Commission determining that the habitat is an ESHA.

2. Allowable Use. Section 30233 of the Coastal Act identifies eight allowable uses for the dredging, diking, and filling of coastal waters. Section 30233(a) of the Coastal Act does not identify flood-control facilities as an allowable use. Additionally, Section 30240 limits projects within an ESHA to those activities that are dependent on the sensitive resources. Clearly, an erosion control structure is not dependent on sensitive resources. However, Section 30236 of the Coastal Act allows for alteration of streams for flood-control purposes, if it meets the other requirements of that section. Section 30236 clearly anticipates dredging, diking, and filling of coastal waters and development within riparian areas for flood-control purposes and is a more specific policy than Sections 30233(a) and 30240 and clearly shows legislative intent to allow alteration of streams for flood-control purposes.¹ In other words, Section 30236 of the Coastal Act requires the Commission to approve flood-control facilities in certain circumstances, even though such activities do not comply with the allowable-use tests of Sections 30233(a) and 30240 of the Coastal Act. Thus, the permissive language in Section 30236 provides evidence of legislative intent that, where necessary and properly designed, the Commission can authorize flood-control facilities under the Coastal Act.

Before the Commission can authorize a flood-control project, it must find that the activity meets all of the requirements of Section 30236. That section allows alterations of streams if they are for flood-control purposes and if there are no other feasible method for protecting existing structures in the floodplain. According to the Corps, the proposed flood-control facility is necessary to protect an existing bridge. In its environmental assessment, the Corps describes the need for the project as follows:

The purpose of the proposed project is to stabilize the access bridge to the South Coast Treatment Plant operated by the SOCWA. The access bridge provides the only vehicular access to the plant in addition to serving as a conduit for electrical, gas, and potable water transmission lines. Stabilization of the channel invert also will protect the effluent transmission line that currently crosses the creek at grade upstream of the bridge. The SOCWA (formerly the Aliso Water Management Agency) attempted to stabilize the bridge during the winter storms of 1997 and 1998 by placing rock protection along and immediately upstream of the

¹ Giving precedence to the more particular provisions of section 30236 over the more general provisions of sections 30233(a) and 30240(a) is in accord with generally applicable principles of California law. See, e.g., Civil Code § 3534 ("Particular expressions qualify those which are general.").

abutments. However, the long-term trend of channel degradation documented in this reach of Aliso Creek continues to threaten the structure. Currently, the bridge is at risk of failure from scour that has left the abutments exposed 0.1 to 0.3 meters above the stream invert. The bridge is essential to the operation of the plant as failure would result in an interruption of treatment plant operations and the release of untreated sewage into Aliso Creek.²

As described in the quote above, erosion of the bank caused by flooding events on the river threaten the existing treatment plant bridge. In addition, this erosion threatens existing utilities that are located on the bridge, including sewage inflow and discharge pipes. The proposed project would provide erosion control and protection for the existing roads and utilities. Therefore, the project is for flood-control purposes and protects existing development, and the Commission finds that the project is an allowable use for alteration of the stream.

3. Alternatives. Both Sections 30233 and 30236 require the Commission to consider alternatives to the proposed project. Specifically, Section 30233 requires the Commission to find that the project is the least environmentally damaging feasible alternative, and Section 30236 requires the Commission to find that there is no other alternative for protecting existing structures.

As described above, erosion caused by the stream threatens the bridge pilings. The Corps evaluated four alternative projects, the no-project alternative and three different grade-control structures. It did not initially consider any 'build' alternative to protect the bridge that did not result in significantly altering the stream. The Commission staff requested such a consideration, both to determine the project's consistency with Sections 30233 and 30236, and due to concerns about the effectiveness of this type of structural solution in general to erosion problems. In a document published by the San Francisco Bay Region, California Regional Water Quality Control Board, that agency raises concerns about this type of project. That document³ states that:

Grade control structures have been prescribed to hold the bottoms of stream channels at a desired elevation but these structures often result in unintended channel erosion. Grade control structures are any structures intended to hold or modify the elevation of the bottom of a stream. Frequently, bridge footings and culverts affect the grades of streams. If, for example, a culvert is dropped into a channel so its bottom is below the natural creek slope, the culvert will tend to catch sediment and fill. In the meantime, this lowering of the creek bed can create channel erosion that moves in an upstream direction

² Final environmental assessment, February 2002, p. 2-1.

³ A Primer on Stream and River Protection for the Regulator and Program Manager, Technical Reference Circular W.D.02-#1, San Francisco Bay Region, California Regional Water Quality Control Board, April 2003, pp.39-40.

Failures of existing structures on Aliso Creek support the concerns raised by the Regional Board. Exhibit 4 describes significant changes that have occurred on Aliso Creek from drop structures, culverts, cutoff walls, and other drainage facilities. One of the drop structures (which is also in the coastal zone) closest to the proposed project site is one of the largest such structures on the stream. It appears to have caused serious damage to the stream and the structure has failed because of this damage (this drop structure was not designed or constructed by the Corps). In the Hydraulic and Sediment Analysis Appendix to the Corps' Aliso Creek Watershed Study, the Corps describes the failure as follows:

Reach #6 continues upstream from the Wood Canyon Creek confluence to the downstream end of the Aliso Creek Wildlife Habitat Enhancement Project (ACWHEP) drop structure at station 55.58. The channel slope of the reach is 0.7% and the bottom widths vary from 5-7 meters. The scoured area downstream of the structure is almost 50 meters wide. The ACWHEP structure is a 6-meter high, grouted concrete drop structure that is intended to function as a grade control and as a means to collect creek water for irrigation of flood plain vegetation in the downstream overbanks. It includes a low-flow pipe that outlets into the grouted slope on the downstream side and a concrete dip section that forms the grade control and passes the higher flows. The downstream end of the structure has been undermined by a scour hole, and the (inflexible) grouted riprap on the banks has continued to fracture in large pieces. The large events that occurred over the winter of 1997/98 have undermined the broken up protection even further.⁴

As part of the Aliso Creek Watershed Study it is involved in, the Corps is planning for redressing past poor designs and is aware of the pitfalls involved in previously built upstream structures in this watershed. The Corps has coordinated with the U.S. Fish and Wildlife Service, California Department of Fish and Game, and Regional Water Quality Control Board, and has designed the proposed grade control structure to provide appropriate slopes and transitional structures at the upstream and downstream ends of the structure to avoid its contributing to scour and erosion concerns. If successful, the proposed structure may serve as a model to be used for replacing the upstream structures with better-planned structures. In addition, if it accomplishes raising the elevation of the streambed (rather than the increased lowering which is now occurring), the proposed structure may benefit upstream habitat by improving natural water supply to riparian vegetation.

In addition, in response to the Commission staff's request that the Corps analyze the alternative of lengthening the bridge as a way to reduce the need for substantial and permanent alterations to the stream, the Corps responded with information stating that such an alternative would be infeasible and more environmentally damaging. The Corps states a modified bridge alternative:

⁴ Aliso Creek Watershed Management Study, Orange County, California, U.S. Army Corps of Engineers, Los Angeles District, October 2002, Final Hydraulic and Sediment Analysis Appendix, December 2000, p. 36.

(1) would cost at least \$1.5 million (a figure that does not include any mitigation costs and does not include the cost of relocating sewage treatment tanks and other facilities located adjacent to the existing bridge), or approximately four times the cost of the proposed project (i.e., \$400,000); (2) would necessitate relocating sewage tanks to the east; and (3) would result in adverse effects to healthy coastal sage scrub habitat to the west. Based on this additional information and on the analysis in the preceding paragraph, the Commission agrees with the Corps that the proposed project is the least environmentally damaging feasible alternative.

4. **Mitigation.** Finally, both Sections 30233 and 30236 of the Coastal Act require that the applicant provide mitigation for adverse impacts from the project. Since it has the potential to affect stream habitat, wetland vegetation, and the riparian community, the Corps proposes to mitigate for these effects. The Corps describes the project's effects to riparian and wetland resources as follows:

Implementation of the proposed project would impact approximately 42 meters (134.5 feet) of Aliso Creek beginning at a point 14 meters (45.9 feet) upstream of the bridge. Within this reach, the project would impact 0.25 acre of jurisdictional waters of the United States, including approximately 0.15 acres of riparian habitat and 0.10 acres of streambed, in addition to approximately 0.13 acre of non-jurisdictional riparian and upland habitats.⁵ Impacts to jurisdictional waters are attributable to the construction of a sloping grouted stone pool and riffle grade control structure. Impacts in the immediate vicinity of the bridge, considered to be within 15 meters (49.2 feet) upstream and downstream, are not considered significant since this area is highly disturbed from prior stabilization activities and supports very little native vegetation.⁶

The Corps proposes to mitigate for these impacts to wetlands and other sensitive resources. Specifically, the Corps proposes the following:

The project impacts on jurisdictional waters, wetland, and riparian habitats would be mitigated as required by USFWS and the Coastal Commission. A total of 0.85 acres of riparian habitat would be established. The required mitigation would be provided at three locations adjacent to Aliso Creek. As discussed above, 0.1 acre of mitigation would be provided within the immediate project site, while the remaining 0.75 acres would be provided at two sites downstream. One 0.5-acre mitigation site would be established on the inside curve of the first downstream bend and a second 0.25-acre mitigation site would be established on the inside curve of the following bend, as shown in Figure 6 attached [Exhibit 7].

⁵ The biological resources impact analysis provided in the EA for the project did not distinguish between non-jurisdictional riparian area and non-riparian upland habitat area in the calculation of disturbed areas. Thus, for this analysis and for determining the amount of compensatory mitigation, all affected upland habitat is considered as non-jurisdictional riparian habitat. [Footnote in original.]

⁶ Consistency Determination, p. 4.

These sites would be planted with a combination of mulefat scrub, willow scrub, and cottonwoods. The mitigation areas would be planted and maintained by the Corps through the end of construction when the project would be transferred to SOCWA. SOCWA would be responsible for continued monitoring and management of the mitigation areas per contracted specifications established by the Corps. The planting, irrigation, and maintenance specifications are provided in Appendix B of ...[the consistency determination]. With implementation of the proposed mitigation measures, impacts to jurisdictional waters and wetlands and non-jurisdiction riparian areas would be less than significant.⁷

Thus, the Corps proposes to mitigate the impacts to riparian resources at a ratio of 3:1, to be located downstream in the two areas depicted in Exhibit 7. With this mitigation, the Commission finds the project meets the mitigation requirements of Sections 30233 and 30236, and, further, that it would avoid significant disruptions to an ESHA as required by Section 30240.

5. Conclusion. With the additional information submitted by the Corps, the Commission finds that the project is an allowable use pursuant to 30236, is the least damaging feasible alternative, and includes feasible mitigation. Therefore, the Commission finds that the project is consistent with the stream alteration, wetland fill, and ESHA policies (Sections 30233, 30236, and 30240) of the Coastal Act.

B. Public Access and Recreational Resources. Section 30210 of the Coastal Act provides that:

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

The proposed project is not located between the first public road and the sea, and therefore, it will not affect access to the shoreline. However, the project is located adjacent to publicly owned open space. According to the Corps, the project would not affect recreational use of the open space area. Specifically, in its consistency determination, the Corps states that:

The proposed streambank stabilization project would not cause a significant adverse impact upon recreational facilities or recreational opportunities. The project site is located over one mile from the mouth of the creek at the Pacific Ocean within an isolated portion of Aliso Canyon accessible only via a private road. The project site is located within a portion of the Aliso and Wood Canyons Regional Park that is not utilized for recreational purposes and is not accessed by any component of the park trail system.

⁷ Consistency Determination, p. 4

Based on this information, the Commission concludes that the project would not affect recreational resources of the coastal zone. Therefore, the Commission finds that the project is consistent with access and recreational resources of the Coastal Act.

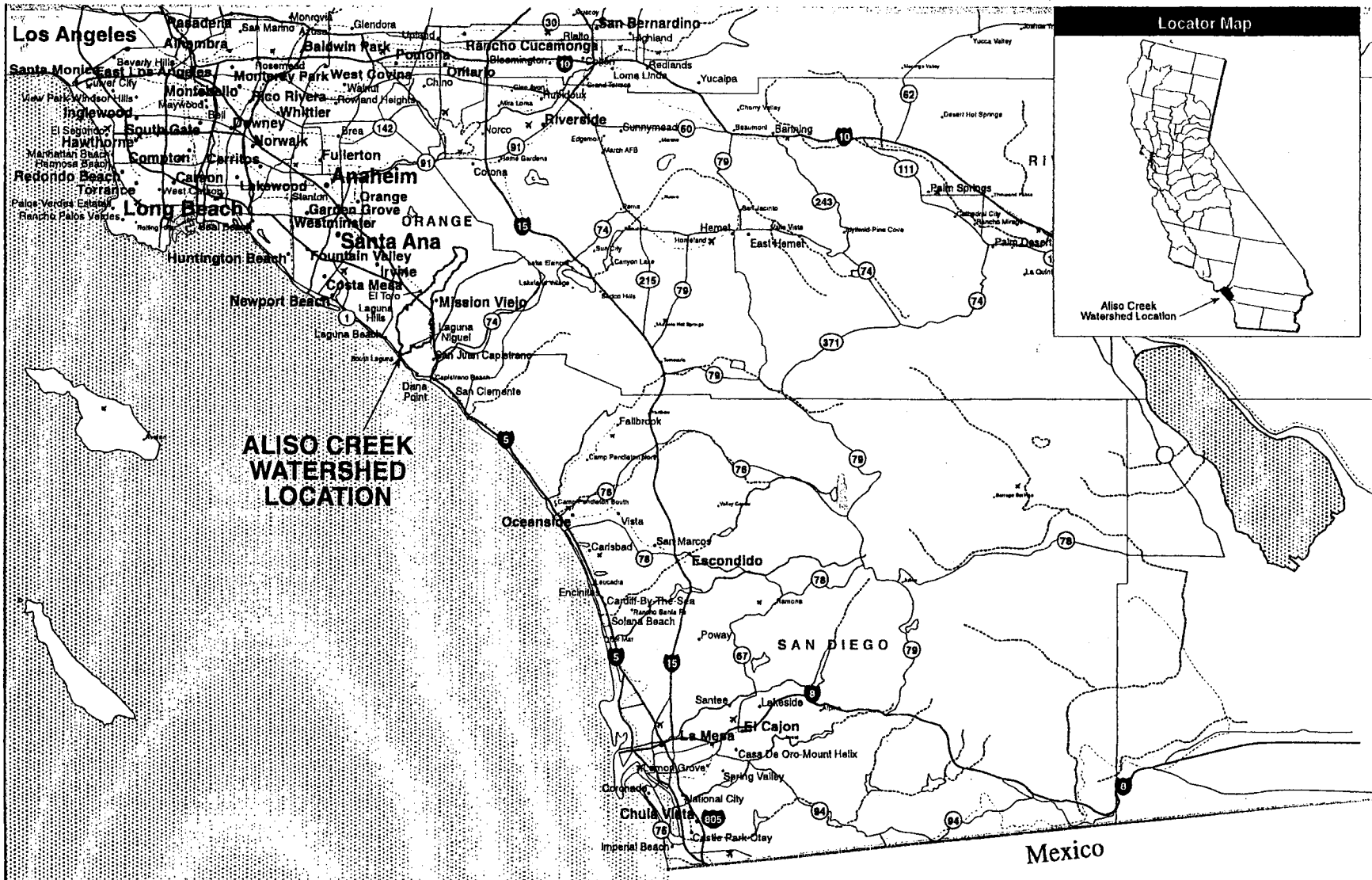
C. Visual Resources. Section 30251 of the Coastal Act provides that:

The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

As described above, the project is located in a remote area of the open space preserve and is not publicly accessible. Since the Commission usually interprets the Coastal Act's visual policies in a manner that protects public views, the project would not affect this resource. Additionally, existing development, including the existing bridge, abutment protection, and the wastewater treatment plant, has degraded the visual quality of the area. The proposed project would be consistent with the developed character of this area. Therefore, the Commission finds that the project is consistent with the visual policy of the CCMP.

VIII. Substantive File Documents.

1. ND-098-01, Objection to a negative determination by the Corps of Engineers for a grade-control structure on Aliso Creek protecting the bridge to the South Orange County Wastewater Authority Coastal Treatment Plant.
2. Final environmental assessment South Orange County Wastewater Authority Coastal Treatment Plant Access Bridge, February 2002.
3. Aliso Creek Watershed Management Study, Orange County, California, U.S. Army Corps of Engineers, Los Angeles District, October 2002.
4. A Primer on Stream and River Protection for the Regulator and Program Manager, Technical Reference Circular W.D.02-#1, San Francisco Bay Region, California Regional Water Quality Control Board, April 2003.



Source: Cartographic Databank 1995.

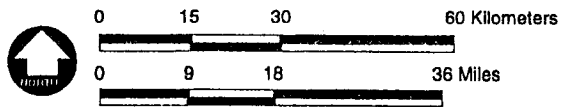
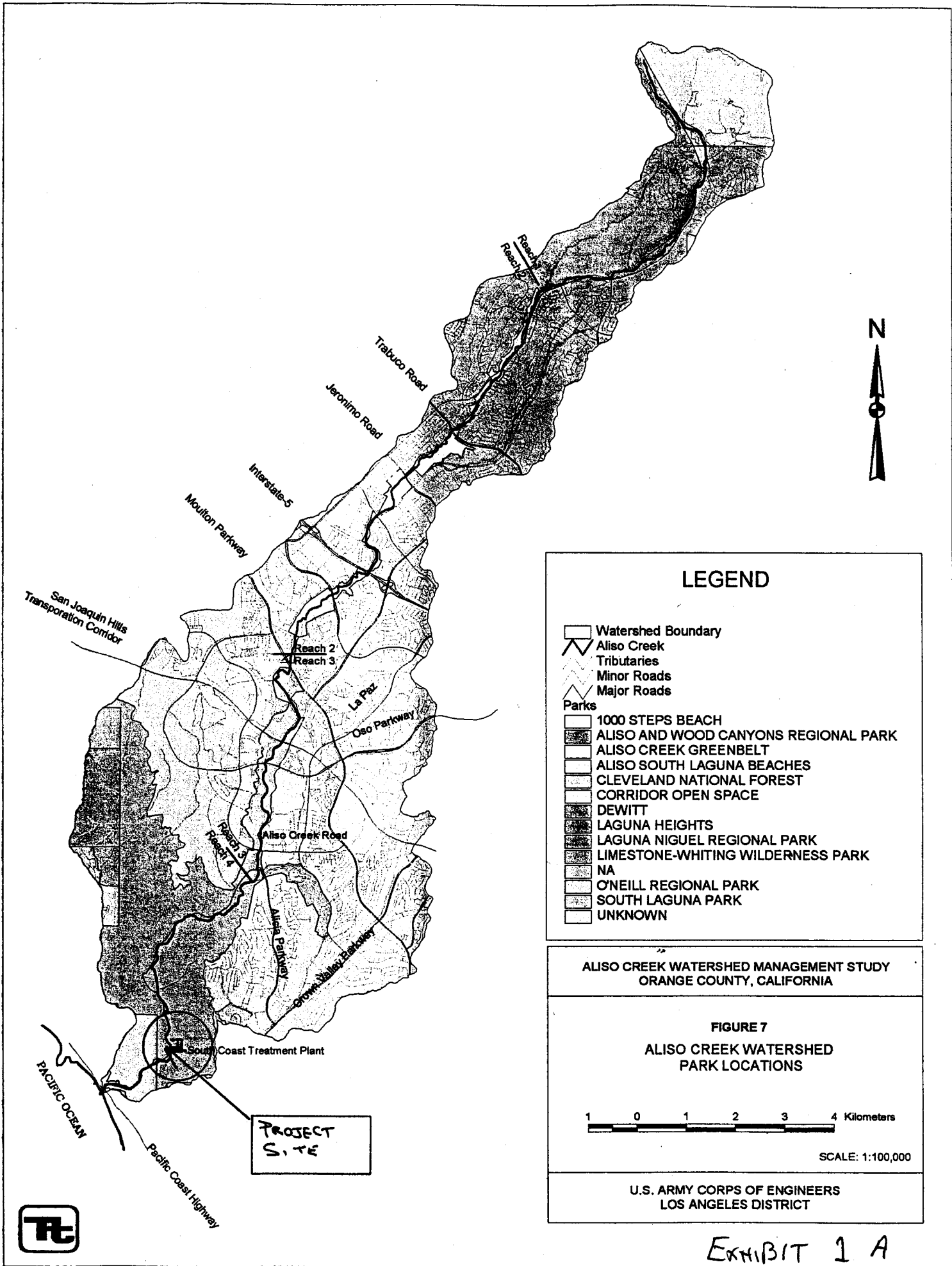


EXHIBIT NO. 1
APPLICATION NO. CD-087-03

Figure 1-1
Regional Location



LEGEND

- Watershed Boundary
- Aliso Creek
- Tributaries
- Minor Roads
- Major Roads
- Parks**
- 1000 STEPS BEACH
- ALISO AND WOOD CANYONS REGIONAL PARK
- ALISO CREEK GREENBELT
- ALISO SOUTH LAGUNA BEACHES
- CLEVELAND NATIONAL FOREST
- CORRIDOR OPEN SPACE
- DEWITT
- LAGUNA HEIGHTS
- LAGUNA NIGUEL REGIONAL PARK
- LIMESTONE-WHITING WILDERNESS PARK
- NA
- O'NEILL REGIONAL PARK
- SOUTH LAGUNA PARK
- UNKNOWN

ALISO CREEK WATERSHED MANAGEMENT STUDY
ORANGE COUNTY, CALIFORNIA

FIGURE 7
ALISO CREEK WATERSHED
PARK LOCATIONS



SCALE: 1:100,000

U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT

PROJECT
SITE



EXHIBIT 1 A

PRELIMINARY
NOT FOR CONSTRUCTION

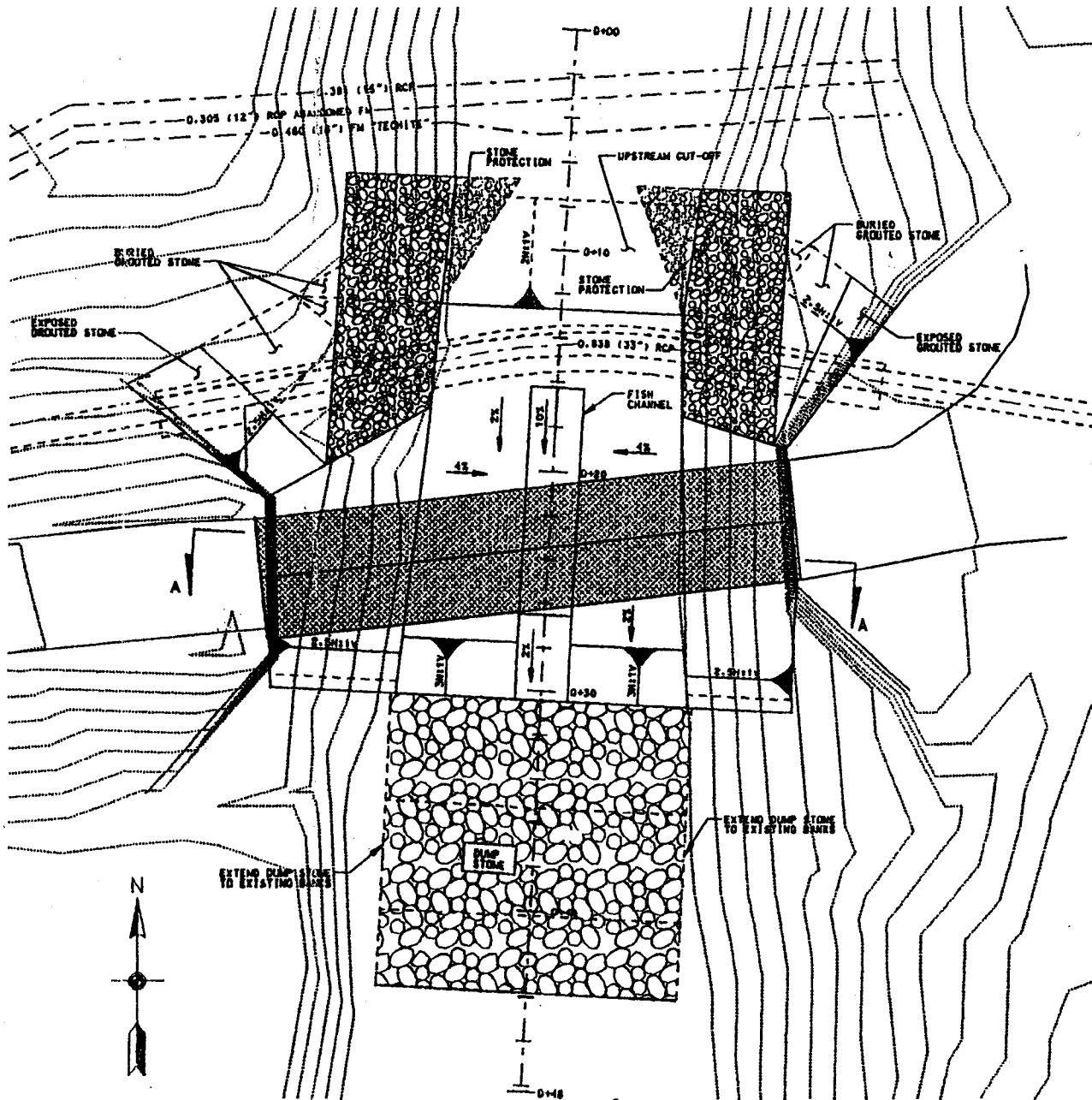


EXHIBIT NO. 2
APPLICATION NO. CD-087-03

California Coastal Commission

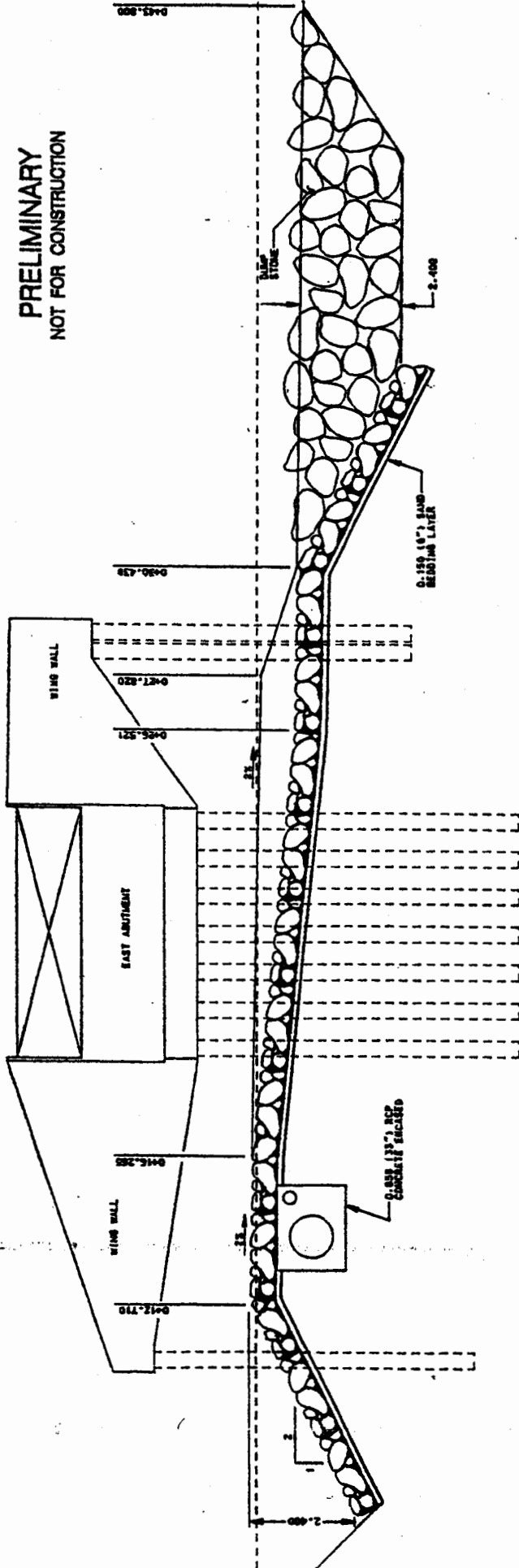
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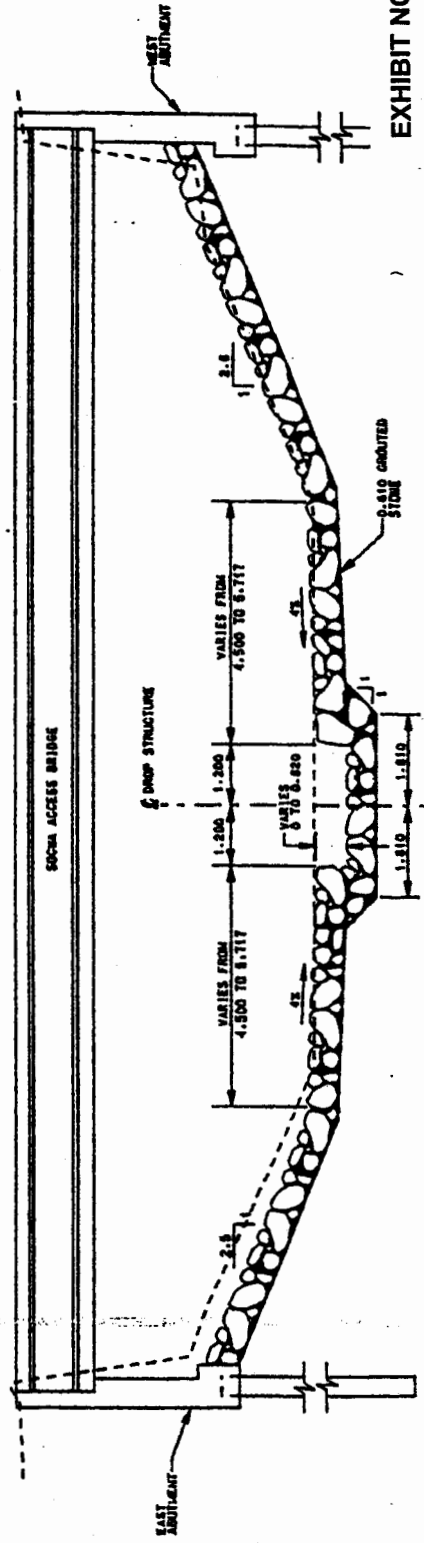
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EXHIBIT NO. 3
APPLICATION NO. CD-087-03

ACWHEP Structure to Coastal Treatment Plant (Reach 4-6: Station 19.00 to 56.00). The 6-meter ACWHEP drop structure is the largest drop structure along Aliso Creek. It appears that some head cuts were migrating upstream, and the structure checked the migration for several years; however, the latest (1998) storms have caused severe undercutting at the toe of the structure, compromising its integrity. The channel bed degraded between 1 and 2 meters from 1994 to 1998 over a channel length of 2000 meters downstream of the drop structure.

AWMA Road Crossing to Aliso Creek Wildlife and Habitat Enhancement Project (ACWHEP) Structure (Reach 7-8: Station 56.00 to 78.00). This reach shows consistent degradation (from 1-4 meters) from 1967 to 1994. According to the Raub (1982) report, much of the erosion in this (and the following) portion of the channel occurred in the flood of 1980. However, since 1994 the channel has actually aggraded slightly. Three drop structures have been constructed in this reach since 1967; a 1.2-meter drop just upstream of the AWMA Road crossing, a 2-meter drop at the AWMA Road crossing, and a 1.2 meter drop just below the Sulphur Creek confluence.

Federal Building to AWMA Road Crossing (Station Reach 9-10: 78.00 to 85.00). Two 3-meter concrete drop structures were built to maintain the original channel slope when Aliso Creek was channelized through this reach in 1969. Although the drop structures act as control points for the channel profile, they do not prevent sedimentation. A case in point is the downstream drop structure, which was visible in the 1971 survey, covered by sediment in the 1977 and 1983 surveys, and exposed again in the 1994 survey. This demonstrates the dynamic nature of the channel.

Pacific Park Drive to Federal Building (Reach 11-12: Station 85.00 to 103.00). Although the channel bed showed very little vertical variation from 1971 to 1983, at some point after 1983, erosion necessitated the construction of a 2-meter riprap drop structure near station 97.50. The drop is clearly visible in the 1994 and 1998 profiles.

Pedestrian bridge to Pacific Park Drive (Reach 13-14: Station 103.00 to 121.00). The head cut shown in the 1971 channel profile just above the current I-73 crossing (station 109.50) is probably due to the cut-off of the horseshoe bend shown in the plan form comparison in Figure 5.4. Upstream migration of head cutting would now be prevented by the drop structure at the pedestrian bridge. Significant aggradation (up to 2 meters) occurred just downstream of the pedestrian bridge between 1994 and 1998.



**Additional Information for
SOCWA Aliso Creek Access Bridge Protection Consistency Determination**

The proposed construction of bridge fortification at the bridge abutments for the SOCWA Treatment Plant on Aliso Creek has been designed to help prevent flood erosion both for the abutments and the stream bed in the immediate vicinity of the bridge. The project is designed to result in the least amount of disturbance of the stream bed by limiting the size of the area that would need to be excavated at the abutments as well as the finished stream bed. After the stream bed is filled in to its appropriate fill line, the surface of the fill would be protected with grouted stone such that the finished grade is suitable for both the upstream and downstream falls. The finished project would be designed to avoid a drop structure with a major drop downstream that could erode the stream bed. Instead, it is contoured to meet the slope of the downstream grade. This project as designed was accepted by the USFWS and we have a letter of support for the project dated Jan 16, 2002 (appended to the Final EA for the project).

The construction of a new, longer bridge instead of fortifying the existing bridge has many disadvantages, as detailed below:

1. The cost of the new bridge would be about 5 times more than the \$400,000 price tag for this bridge fortification project.
2. The aerial extent of disturbance with respect to a longer bridge would be two to three times the bridge fortification alternative, the reasons are that a much larger area need to be demolished to remove the existing the bridge, the area disturbed by the new abutments will be much larger for a much longer bridge than the existing bridge, the new bridge would need to have some kind of a concrete stream bed erosion structure because of the experiences that we have had seeing that Aliso Creek has a very erosive stream bed material. Therefore overall the new bridge would cost more, will disturb much larger are of project footprint and would also require to have a similar stream bed erosion protection structure like the one proposed in the bridge fortification project.

We trust that this brief analysis of the alternative suggested by Coastal Commission staff adequately explains our reasons for rejecting said alternative as infeasible.

EXHIBIT NO. 5

APPLICATION NO. CD-087-03

**Figure 4-1
Vegetation Communities in the Project Area**

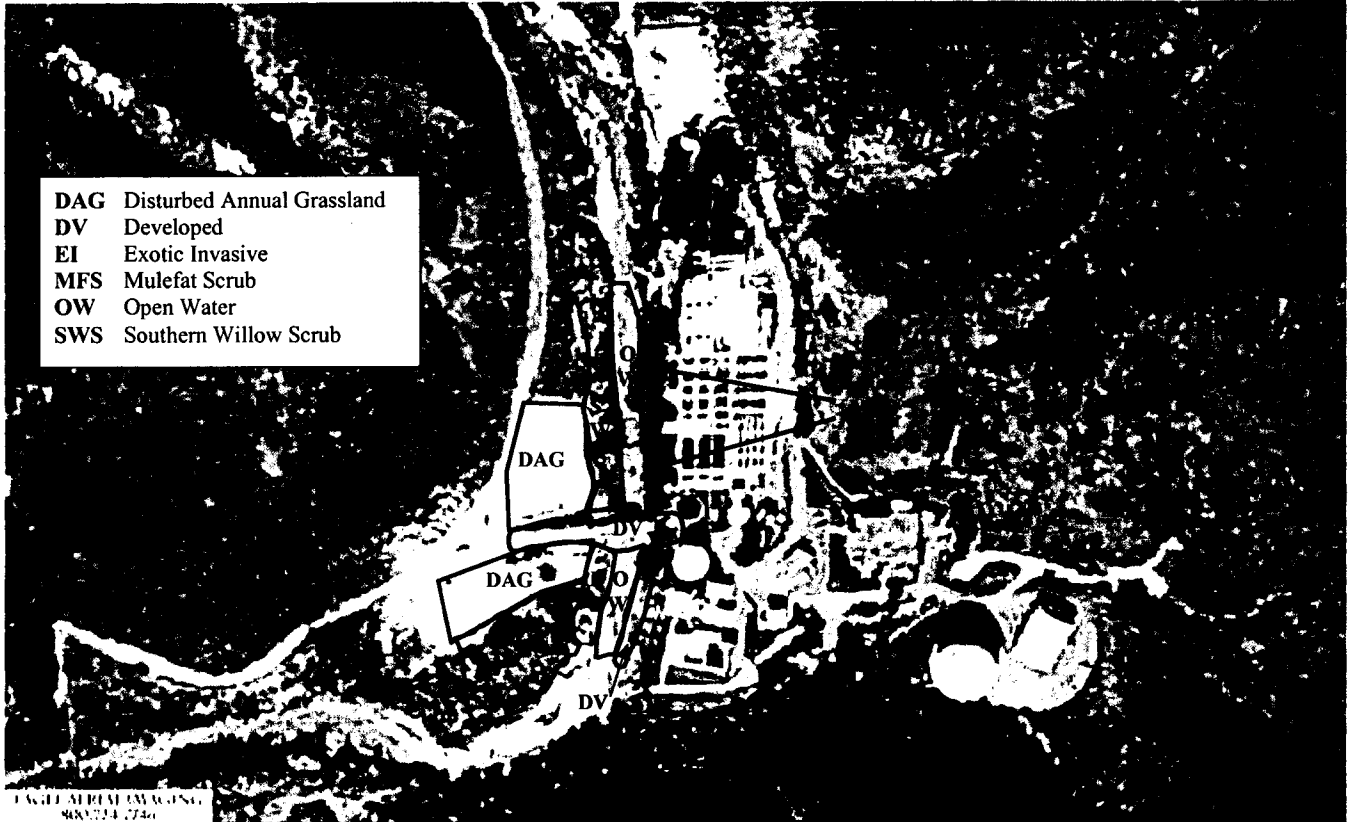




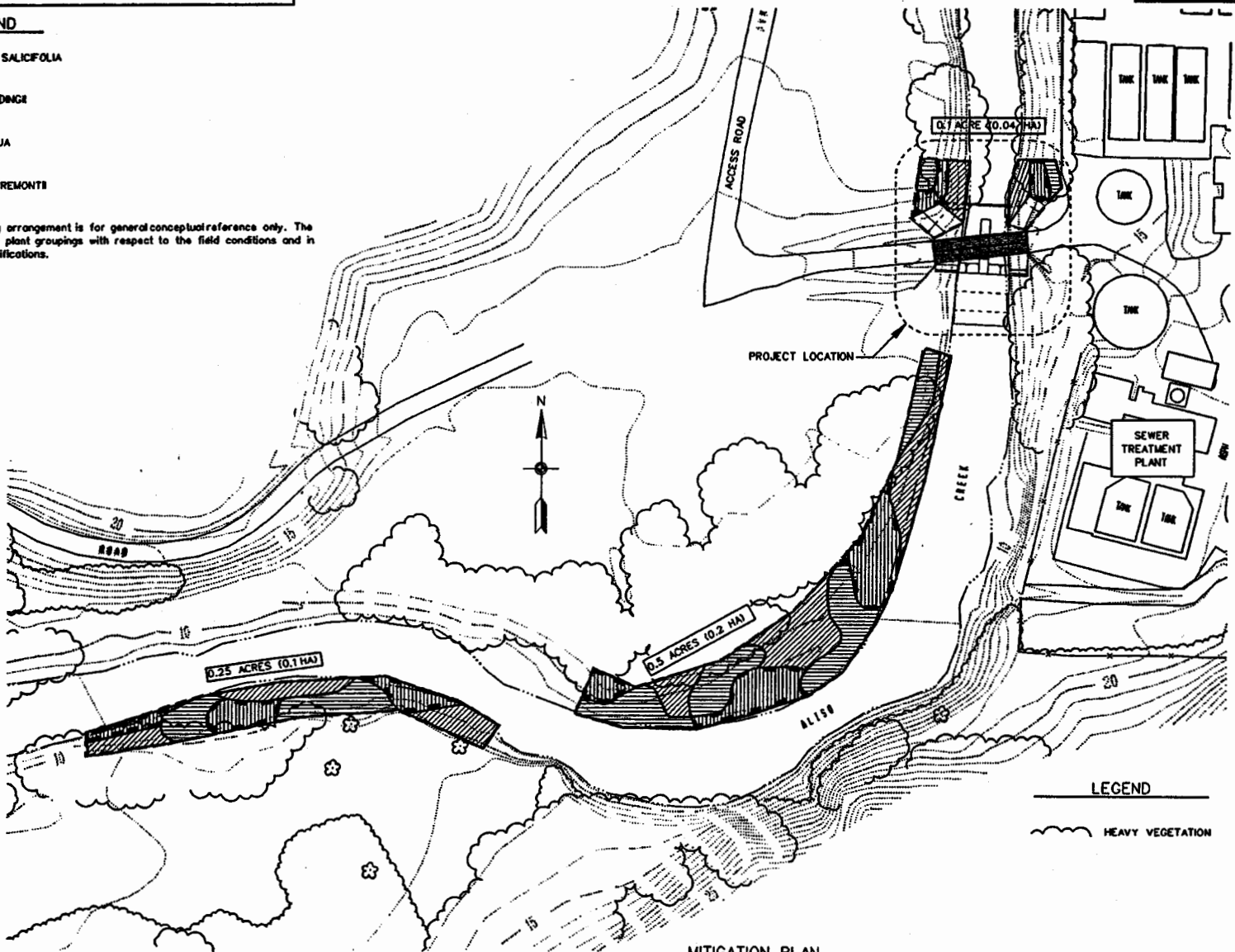


Figure 6: Mitigation Plan

PLANT LEGEND

-  BACCHARIS SALICIFOLIA
-  SALIX GOODENGR
-  SALIX EXIGUA
-  POPULUS FREMONTI

NOTE: This plant grouping arrangement is for general conceptual reference only. The Contractor shall layout the plant groupings with respect to the field conditions and in conformance to the specifications.



METRIC

MITIGATION PLAN
SCALE: 500:1

LEGEND
HEAVY VEGETATION

SAFFTY PAYS

ALSO CREEK
SOGWA ACCESS BRIDGE PROTECTION
MITIGATION PLAN

DESIGNED BY THE
U.S. ARMY ENGINEER DISTRICT
LOS ANGELES
CHECKED BY THE
CORPS OF ENGINEERS
SUBMITTED BY
THOMAS H. SAFF, P.E.
DATE: 08/14/03
PROJECT FILE NO. 03P-18-00000-04-0000

EXHIBIT NO. 7

APPLICATION NO. CD-087-03